



# *Geophysical Society of Pittsburgh*



*Proudly Presents Tuesday, September 11, 2018  
At Cefalo's Restaurant, Carnegie, PA*

## ***Seismic reservoir characterization of Utica-Point Pleasant shale – a case study*** Satinder Chopra, TGS

Utica shale is one of the major source rocks in Ohio and extends across much of eastern US. Its organic richness, high content of calcite, and development of extensive organic porosity makes it a perfect unconventional play and has gained attention of oil and gas industry. The primary target zone in the Utica includes Utica, Point Pleasant, and Trenton intervals. In the present study, we attempt to identify the sweet-spots within the Point-Pleasant interval using 3D seismic data, available well data, and other relevant data. This has been done by way of organic richness and brittleness estimation in the rock intervals. The brittleness has been derived using rock-physics parameters such as Young's modulus and Poisson's ratio. Deterministic simultaneous inversion along with neural network approach have been followed to compute rock-physics parameters and density using seismic data. The consistency of sweet spots identified based on the seismic data with the available production data emphasize the integration of seismic data with all other relevant data. We find that the Point Pleasant formation does not seem to follow the commonly followed variation in terms of low Poisson's ratio and high Young's modulus for brittle pockets. Instead, by restricting the values of Poisson's ratio and examining the variation of Young's modulus, we could determine the brittleness behavior within the Point Pleasant interval. Combining the brittleness behavior with the organic richness determined through the density content, we could pick sweet spots in the Point Pleasant interval which matches the production data. Through this case study, we emphasize the integration of 3D surface seismic data with all other relevant data to accurately characterize the Point Pleasant formation.



**Speaker Biography:** Satinder Chopra, TGS, Satinder Chopra has 34 years of experience as a geophysicist specializing in processing, reprocessing, special processing, and interactive interpretation of seismic data. He has rich experience in processing various types of data such as vertical seismic profiling, well-log data, seismic data, etc., as well as excellent communication skills, as evidenced by the many presentations and talks delivered and books, reports, and papers he has written. He has been the 2010–2011 CSEG Distinguished Lecturer, the 2011–2012 AAPG/SEG Distinguished Lecturer, and the 2014–2015 EAGE e-Distinguished Lecturer. He has published eight books and more than 400 papers and abstracts and likes to make presentations at any beckoning opportunity. His work and presentations have won several awards, the most notable ones being the EAGE Honorary Membership (2017), CSEG Honorary Membership (2014) and Meritorious Service (2005) Awards, 2014 APEGA Frank Spragins Award, the 2010 AAPG George Matson Award, and the 2013 AAPG Jules Braunstein Award, SEG Best Poster Awards (2007, 2014), CSEG Best Luncheon Talk Award (2007), and several others. His research interests focus on techniques that are aimed at the characterization of reservoirs. He is a member of SEG, CSEG, CSPG, EAGE, AAPG, and the Association of Professional Engineers and Geoscientists of Alberta (APEGA).

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Cost: \$35 Members, \$40 Non-members (\$20 for Students). Meeting Location: 428 Washington Ave, Carnegie, PA 15106  
(412) 276-6600.*

*September 11, 2018*

*Agenda:*

*5:00 pm Social Hour (Beer and Wine)*

*5:45 pm Dinner Buffet*

*6:30 pm Lecture*

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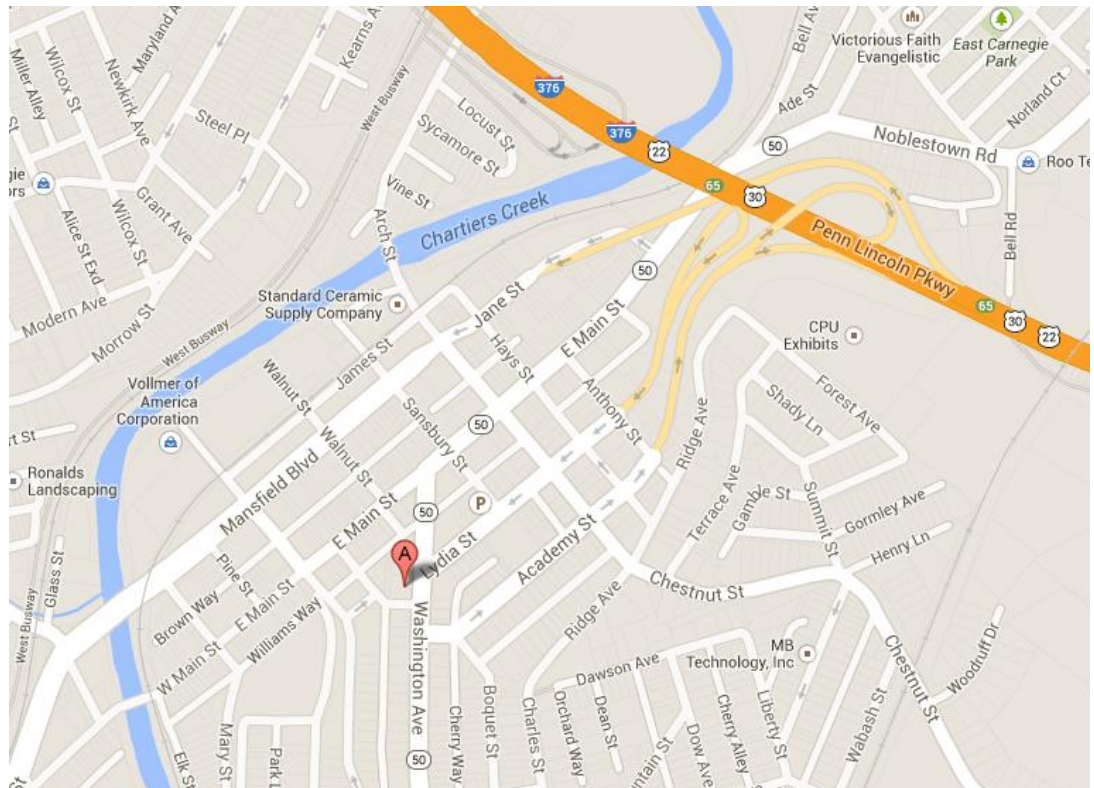
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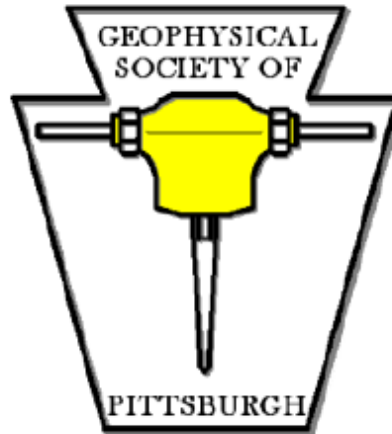
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